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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,606	10/09/2003	Garo J. Derderian	108298738US	1013

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EXAMINER	
TUROCY, DAVID P	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	**Application No.** 10/683,606	**Applicant(s)** DERDERIAN, GARO J.
	Examiner David Turocy	**Art Unit** 1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.
  4a) Of the above claim(s) *25-38* is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-24* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *09 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

S.O.O.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-24, drawn to a method for depositing a layer, classified in class 427, subclass 569.

II. Claims 25-38, drawn to an apparatus for depositing material, classified in class 118, subclass 715+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be utilized for a material different process such as a plasma chamber where the deposited conductive material is not transformed into a dielectric material and/or a more transmissive material.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Paul Parker on 4/13/2005 a provisional election was made without traverse to prosecute the invention of group I, claims 1-24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

5. The abstract of the disclosure is objected to because the abstract appears to be too lengthy; the examiner notes the maximum length for an abstract is 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 18 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 18 and 23: It is unclear what is meant by a temperature that is "at least approximately equal". It appears as though the temperature should most likely be "approximately equal". Please amend the claim accordingly.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted state of the art as taught by the applicants description in view of Japanese Patent Abstract 63020490 by Nakada, hereafter Nakada.

The admitted state of the art discloses a method for depositing a layer onto a microfeature workpiece by injecting a gas into a plasma zone of a vapor chamber and subsequently generating a plasma in the chamber that causes the electrically conductive material, which inherently has a first transmissivity, to be deposited on the workpiece as well as the chamber walls, including a window (paragraph 0005-0006). The admitted state of the art discloses forming the plasma b y transmitting energy into the plasma through the window (Paragraph 0006). The admitted state of the art fails to teach transforming the electrically conductive material onto the window into a dielectric material.

However Nakada, teaching of a method for cleaning the interior surface of a deposition chamber, discloses converting the electrically conductive metal films, in particular titanium and tungsten, to an oxide, i.e. dielectric material, by flowing a fluid containing oxygen into the chamber (abstract). The oxide film inherently has a second transmissivity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the admitted state of the art to convert the deposited metal film on the interior surface of the chamber to an oxide as suggested by Nakada to provide a desirable cleaning of the deposition chamber because Nakada discloses converting the deposited metal film to an oxide is known in the art to simply and safely clean a film forming apparatus and therefore would reasonably be expected to effectively provide cleaning of a window in a plasma film forming apparatus.

Claims 5-8, 16-18, and 22-23: The admitted state of the art in view of Nakada fails to disclose the temperature, relative to the deposition temperature, at which to perform the transformation of metal to oxide. However, the admitted state of the art discloses a deposition temperature around 400 °C, while Nakada discloses after the conversion, heating up the chamber to the sublimation temperature of the oxide material, around 700°C. Therefore, it would have been obvious to one skilled in the art at the time of the invention to convert the deposited metal to an oxide at a temperature approximately equal to the deposition temperature, prior to heating the chamber, in order to effectively and efficiently perform the cleaning process.

Claims 9 and 10: The admitted state of the art in view of Nakada fails to disclose concurrently or intermittently flowing the process gases into the plasma chamber. It is the examiners position that intermittent and concurrent gas flow is known in the art and would have been obvious to one of ordinary skill in the art use either intermittent or concurrent precursor gas flow to provide the gases into a chamber during a plasma coating operation.

Claim 12: The admitted state of the art in view of Nakada fails to disclose repeating the vapor depositing process after changing the residual film to have a second transmissivity. However, such a claim limitation is inherent in the teaching of Nakada because Nakada discloses a process of cleaning a chamber and therefore reasonably suggests repeating the deposition process after effectively cleaning the apparatus.

Claim 13, and 19-24: The admitted state of the art in view of Nakada fails to disclose the second transmissivity is larger then the first transmissivity or in other words increasing the transmissivity of the residual film when converting the metal to the metal oxide. However, the admitted state of the art discloses the secondary deposit of metal on the window has a low transmissivity, see paragraph 0006, and Nakada teaches of converting the metal film into a metal oxide, which reads on the claimed process steps, as evidenced by claim 20, and therefore changing the metal to metal oxide must necessarily result in increasing the transmissivity. Any differences in properties between the claimed invention and that of the admitted state of the art in view of

Nakada must have been caused by process variables not claimed in the instant application.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6006694 and US Patent Publications 2001/0050267 and 2003/0079838 are cited as documents relevant to the general state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER